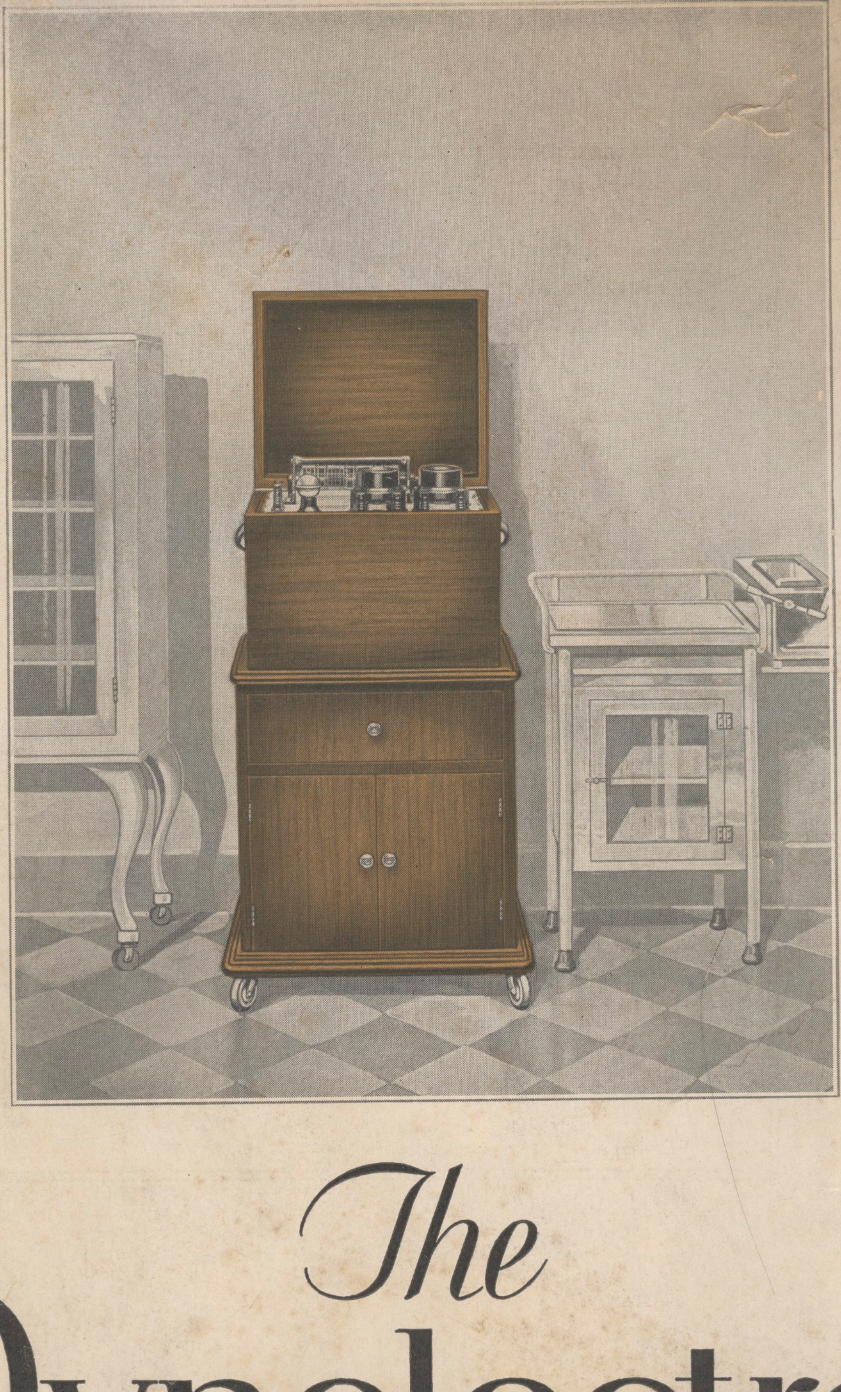


The Dynelectron

Model P

IN *the Model "P" Dynelectron is reflected our experience of almost a quarter century. Though comparatively inexpensive, it is an apparatus of which you can expect much. It will fully measure up to your expectations.*

While more than sufficiently powerful for all work in its line, it is nevertheless still portable. Continuous service, twenty-four hours a day, will not injure or overheat it.

Years of operation in extremes of climate are a real test of electrical apparatus. Model "P's" are in service in almost every civilized country on the face of the earth, successfully withstanding all extremes from the heat and humidity of the tropics to the cold and dryness of the frozen north.

More than nine thousand "P's" are now in use by the medical profession. The present design is the latest improved form of this model, which has been manufactured for more than twelve years past.

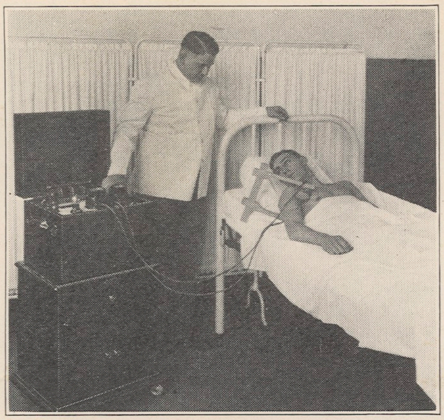
The Liebel-Flarsheim Company

G. H. Liebel

President

The Model "P" Delivers

DIATHERMY (Medical Diathermy), both low and high voltages. Model "P" has always been noted for large volume and perfect smoothness of diathermy current it delivers.



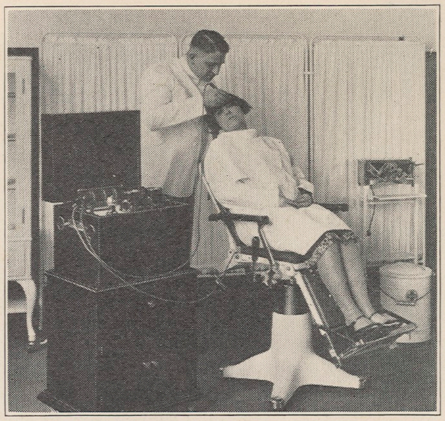
ELECTRO-COAGULATION (Surgical Diathermy), both low and high voltages, of same quality as in medical diathermy, in fact these currents are identical except that the electro-coagulation circuit is obtained from separate terminals without meter.

FULGURATION, the Dynelectron is used exclusively by many of the best urologists for bladder fulguration, etc.

OUDIN CURRENT, for all forms of vacuum electrode applications, desiccation, etc.

AUTO-CONDENSATION, Over 1000 M. A. on average size patient.

DESICCATION, both low and high voltages, hot and cold spark.



◆

The Transformer

THE TRANSFORMER is of the type first evolved with the Model "P" design, depending primarily upon air and liberal spacing for insulation. It is this construction which makes possible a high-powered, but still portable, unit.

Each transformer receives two impregnations of an asphaltum insulating varnish and is put through three separate baking operations. These are costly time-consuming operations, of which few purchasers are aware. As a consequence, however, of the careful processing used on all L-F transformers, insulation breakdown is a totally unknown thing.

In addition to increasing insulation strength and hermetically sealing the windings against future ingress of moisture, these operations also increase the heat conductivity of the coils, thereby leading to cooler operation. The final treatment seals the entire unit of core, coils and mountings into one solid mass, thereby totally eliminating the objectionable A. C. hum so often noted on apparatus of this type.

Meters

TWO instantly interchangeable thermo couple type milliampere meters are supplied, one reading 0-1000 M. A., and one 0-4000 M. A. The interchangeability of the meters provides accurate reading of any desired degree of power.

Each meter is equipped with a platinum wire fuse which will blow and prevent injury to the meter itself in case of accidental short circuit of output cables.

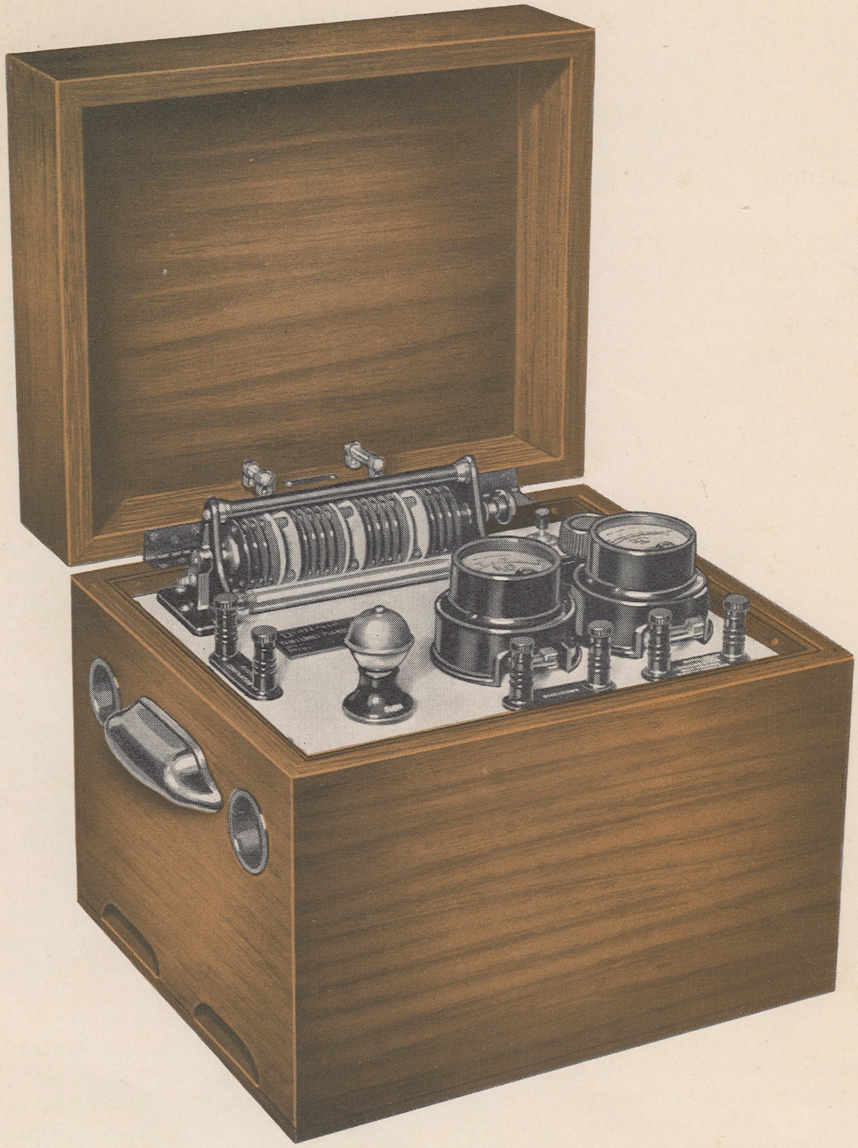
Inside the meter base is mounted an inductance so designed that if a fuse blows, the current is reduced to practically zero, but the circuit is not opened, thus preventing surges and any chance of shock to patient.

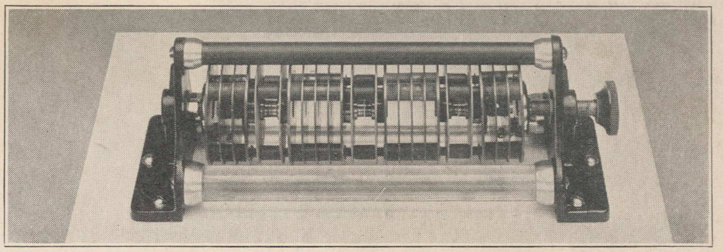
Spark Gap

THE MODEL "P" has always been noted for the very satisfactory performance of its spark gap. Instead of the usual tungsten facings welded to a *steel* backing, the Model "P" gaps have for more than ten years past been equipped with tungsten sparking surfaces which are brazed onto a heavy *copper* backing. This is done in an electric furnace, in which a hydrogen atmosphere is maintained throughout the entire operation, thereby insuring complete freedom from oxidation and a perfect union of the surfaces, both electrically and thermally.

This construction is free from the rapid corrosion experienced with steel backed points, besides possessing the advantage of the much greater thermal conductivity of copper as compared to steel. This permits of a rapid and efficient transfer of heat from spark points to radiators.

The heavy copper spark point backings are in turn attached to extra large radiators by a machine which exerts a pressure of over twenty tons per square inch on the abutting surfaces, practically flowing one metal into another, and making a permanent good thermal union.

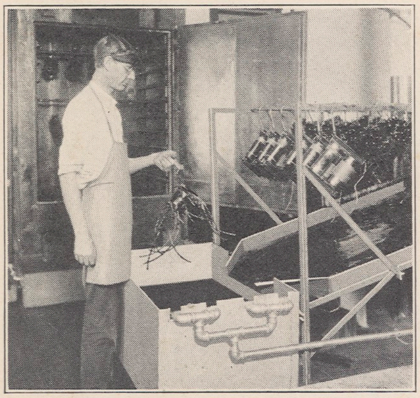




Spark Gap Assembly

The radiators have approximately fifty-eight square inches of radiating surface per gap, thereby keeping the points sufficiently cool under all conditions to maintain the smooth quality of output current for which the Dynelectron has always been noted.

The triple (six point) tungsten spark gap, besides performing the functions of a spark gap, also permits of extra fine power control, intermediate to that obtained from the control switch settings.



Transformer Impregnation

Turning the gap knob adjusts all three gaps simultaneously. The gaps are provided with individual spacing calibrators so they can be easily adjusted for all gaps to function alike.

When necessary to clean the gap (which is only required at very infrequent intervals with this design) it can be done in a few minutes without special tools.

Power Control

THE new type of switch mechanism used on our power control, recently developed by us, permits moving from one power setting to another while the machine is in use, without turning off current. No "dead buttons" are used. Injurious arcing cannot occur. The experienced user of diathermy apparatus will quickly appreciate the practical value of this improvement.

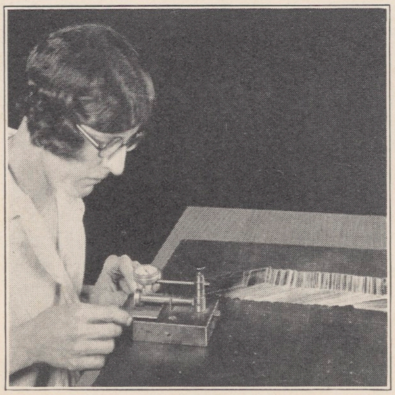
When originally developed in our laboratory, this switch was tested on a fifty per cent overload for more than 250,000 operations. This is equivalent to over twenty-five years of the heaviest usage. At the end of the test all parts were still functioning perfectly.

Seven points of inductance control are provided. The inductance coil itself is as carefully constructed and put through the same processing as the transformer receives.

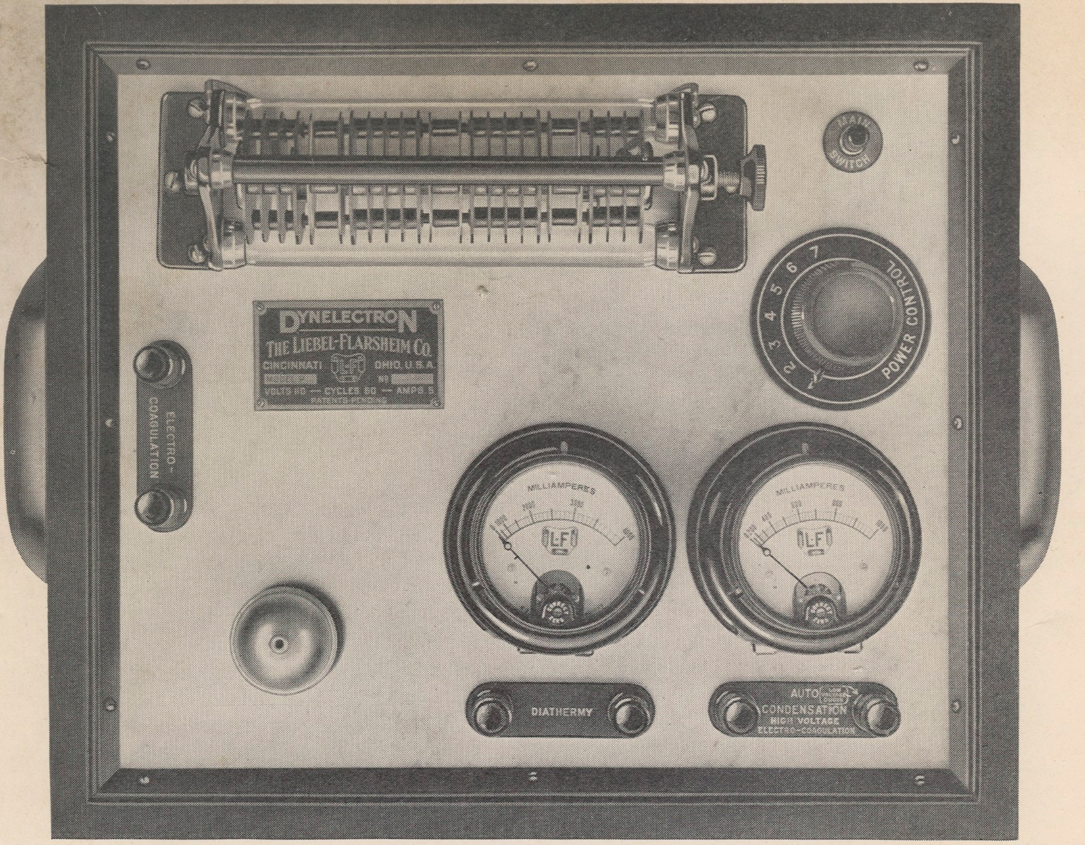
All current carrying parts are submerged below the switchboard where they cannot be accidentally touched.

Resonator

RESONATOR is of the tubular, air-insulated, air-cooled type, wound upon Bakelite tubing and processed the same as the transformer. In over nine thousand machines there have been only two cases of resonator insulation breakdown in service — a most remarkable record.



Gauging Condenser Mica



The Switchboard

Condensers

THREE condensers, series connection, are used, thereby maintaining electrical strains within the condensers at a minimum, and providing extra large insulation safety factors in this important part of the machine.

Satisfactory performance of the apparatus depends a great deal upon the proper design and construction of the condensers. The dielectric used is the highest quality solid mica plate. Thickness of this dielectric material is accurately gauged and held within variation limits of one half of one thousandth of an inch in thickness during manufacture.

After assembly into one unit the condensers are impregnated and baked the same as the transformer, sealing them from the atmosphere, insuring cool operation, and eliminating completely the difficulties so often experienced with "corona" or leakage around condenser plates. These condensers require absolutely no attention whatever in service.

Switchboard

THE illustration gives a good view of the meters, terminals, power control and spark gap, as mounted on the white marble switchboard. The marble itself is held in place by strips at its outer edge, totally embedded in felt. This insures withstanding the roughest handling without injury. The switchboard presents a handsome appearance and excellent contrast against the black finish of the bakelite meter cases, terminal posts, etc. Current supply inlet is mounted in lower rear of cabinet, the location which experience has shown to be most convenient. Foot switch plug is also provided, in lower right side of cabinet. Foot switch and current supply plugs are of entirely different types, so there is no possibility of accidentally interchanging them.

Ground Free

THE MODEL "P" DYNELECTRON is completely insulated against "ground" or connection between patient and incoming power lines. Nevertheless, all the advantages of grounded type construction are retained.

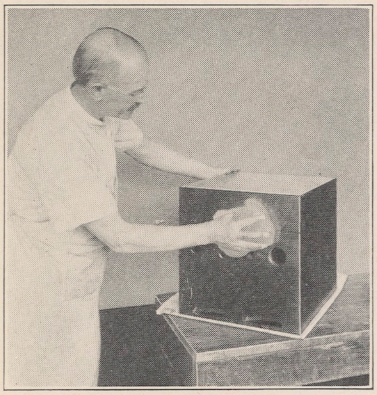
Operates from Lamp Socket

NO special wiring is required. The Model "P" operates from any alternating current lamp socket of proper voltage and frequency.

Ventilation

ALL parts, such as condensers, transformer, resonator, power control, etc., are enclosed within the cabinet. Nevertheless, they remain well within the temperature rise allowances for high grade electrical apparatus. This result has been accomplished by an ingenious arrangement which gives a "smoke stack" action, drawing air in at the bottom of the cabinet, passing it over and around the parts and then out through ventilation ports in the sides and back of cabinet.

Cabinet Work



Cabinet Work Hand Finished

IT is altogether fitting and proper that an article of such merit be mounted in a cabinet matching in beauty and fitments the advanced design and quality of the working parts.

All cabinet work is of three-quarter inch thick, genuine American Walnut plywood, beautifully high-lighted, finished in the latest Duco type lacquers. Rugged enough to stand the abuse that such equipment often receives in service, it nevertheless harmonizes with the most elegant interiors.

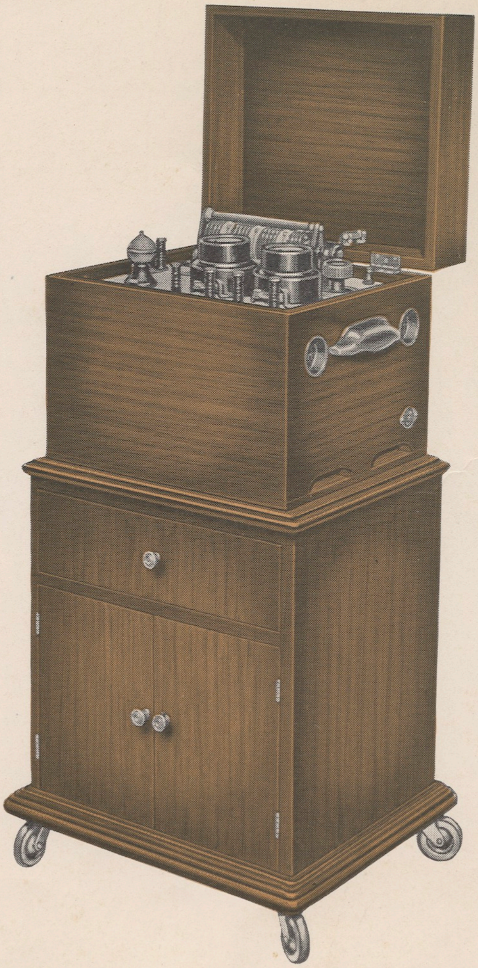
Sub-Cabinet

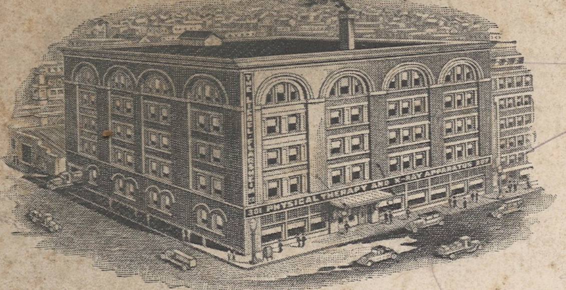
THE sub-cabinet is recommended wherever the apparatus is used in the office or hospital.

In the office it provides a mounting for the Model "P," giving it the same handsome and substantial appearance of a stationary model. It provides drawer space and a lower compartment for the storage of accessories. Thus the Model "P" with sub-cabinet provides all the advantages of a stationary unit plus instant portability by the simple procedure of lifting it off the sub-cabinet.

The large size rubber-tired casters of the sub-cabinet give the unit exceptional mobility — a feature greatly appreciated when the apparatus is moved from one ward to another in the hospital.

When operated on direct current, the lower compartment can be used to house the rotary converter.





The Liebel-Flarsheim Co.

S. W. Cor. Third & Plum Sts., Cincinnati, Ohio

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